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AMSAT NEWS SERVICE
ANS-047

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-047.01
ANS-047 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 047.01
   From AMSAT HQ SILVER SPRING, MD.
February 16, 2014
To All RADIO AMATEURS
BID: $ANS-047.01

University of Louisiana CAPE II Cubesat Designated LO-75

OSCAR Number Administrator Bill Tynan, W3XO announced the University of Louisiana's CAPE II cubesat has been designated as University of Louisiana OSCAR 75 or LO-75.

Bill wrote to AMSAT mentor Nick Pugh, K5QXJ, and the CAPE II cubesat team, "I have been able to determine CAPE II has met all of the requirements for an OSCAR number. By the authority vested in me by the AMSAT-NA president, I hereby issue CAPE II the designation University of Louisiana OSCAR 75 or LO-75. I, and all of the amateur

satellite community, wish LO-75 the best of success".

CAPE II operates on 145.825 MHz with a CW beacon with the callsign W5UL, it also includes a digipeater, text to speech operation, a simplex repeater, email and tweet functions. The ground station software can be downloaded from http://www.ulcape.org

FUNCube was recently issued OSCAR designation as AO-73. CubeBug-2 was designated as LO-74.

[ANS thanks Bill Tynan, W3XO for the above information]

CubeSats deployed from International Space Station

On Tuesday, February 11, 2014 astronaut Koichi Wakata KC5ZTA successfully deployed the first of the 33 CubeSats that were launched from the Wallops Flight Facility, VA to the International Space Station (ISS) in the Cygnus freighter on January 9.

The first two of the Flock-1 constellation of 28 Dove CubeSats made by Planet Labs were deployed at about 0831 UT, it is thought there were another two Dove CubeSats deployed at 1241 UT. Look for the amateur radio satellites in the near future.

In addition to the 28 Planet Labs CubeSats there are four amateur radio CubeSats – LituanicaSat-1, LitSat-1, ArduSat-2 and UAPSat-1 as well as a 915 MHz CubeSat SkyCube.

LituanicaSat-1 carries a 145/435 MHz FM transponder while LitSat-1 is thought to carry a 435/145 MHz linear transponder for SSB/CW communications.

The IARU coordinated frequencies are listed as:

LituanicaSAT-1
• FM Transponder Uplink 145.950 MHz Downlink 435.180 MHz
• AX25 Uplink 145.850 MHz AX25 Downlink 437.550 MHz
• CW Beacon 437.275 MHz
Facebook https://www.facebook.com/Lituanicasat1

LitSat-1
• SSB Transponder Uplink 435.180 MHz Downlink 145.950 MHz
• AX25 Uplink 437.550 MHz Downlink 145.850 MHz
Facebook https://www.facebook.com/palydovas

ArduSat
• 9k6 MSK CCSDS data format downlink 437.? MHz
http://www.kickstarter.com/projects/575960623/ardusat-your-arduino-experiment-in-space

UAPSAT
• AX.25 Packet Radio uplink 145.980 MHz downlink 437.385 MHz

Koichi Wakata KC5ZTA https://twitter.com/Astro_Wakata

NanoRacks https://twitter.com/nanoracks/
Facebook https://www.facebook.com/nanoracks

Planet Labs https://twitter.com/planetlabs

A Dove in Space https://twitter.com/adoveinspace

Southern Stars https://twitter.com/south_stars

Video of NanoRacks interview:
Deploying CubeSats from the Space Station
http://amsat-uk.org/2014/01/31/video-deploying-cubesats-from-the-space-station/

CubeSats deployments are streamed live at
http://m.ustream.tv/channel/live-iss-stream

[ANS thanks AMSAT-UK for the above announcement]

Brazilian students talk to Space Station using Amateur Radio

An Amateur Radio on the International Space Station (ARISS) school contact took place at 17:24 UT on Thursday, February 13, 2014.

International_Space_StationStudents at Escola Estadual 'Gonçalves Dias', Boa Vista, Brazil, using the station of Paulo PV8DX, were able to talk to astronaut Michael Hopkins KF5LJG who was using the callsign OR4ISS. The contact lasted about 9 minutes and took place in English on 145.800 MHz FM.

The school, founded in 1977, works in two shifts, morning and afternoon with a total of 800 students. The school has a specialty program dedicated to Computer Science and related areas – students in this area were directly involved in the ARISS event. These same students were involved in the development of questions and related studies. The school has 70 teachers and 30 administrative support staff.

The students asked these questions:

1. Why did you decide to be an astronaut?
2. How long can a person live in space?
3. How do you communicate with your family?
4. After the mission, what are the most critical physical and psychological effects on your body and mind?
5. If someone is critically injured on the ISS, what would you do with them?
6. In case of illness, how is aid provided?
7. What kind of research are you doing on the ISS?
8. Do you feel disoriented when you return home?
9. Given the incredible commitment to become an astronaut, do you ever doubt your choice?
10. How do you bathe on the ISS?
11. What is the most interesting thing you have seen in Space?
12. Is oxygen recycled continually on the ISS or do supply vehicles bring up new oxygen?
13. What is a typical day like on the ISS?
14. Since there are people from different countries on the ISS, what is the language spoken on the Station and what kind of food do you eat?

Media coverage can be seen at
http://g1.globo.com/rr/roraima/noticia/2014/02/estudantes-de-rr-

fazem-contato-com-astronauta-em-estacao-espacial.html

http://g1.globo.com/rr/roraima/jornal-de-roraima/videos/t/edicoes/v/estudantes-roraimenses-tem-contato-com-astronauta-por-meio-de-projeto-da-nasa/3147827/

http://www.rr.gov.br/index.php?option=com_content&view=article&id=12994:no-espaco-comunicacao-entre-estudantes-de-roraima-e-astronauta-americano-foi-um-sucesso&catid=198:2014fevereiro&Itemid=210

Sign up for the SAREX maillist at
http://www.amsat.org/mailman/listinfo/sarex

Amateur Radio on the International Space Station
http://www.ariss.org/

[ANS thanks ARISS and AMSAT-UK for the above announcement]

New launch dates for SpaceX and Soyuz-2.1b Fregat-M

There are new launch dates for both SpaceX CRS-3 launching from the Cape Canaveral Air Force Station and the Soyuz-2.1b, Fregat-M which will be launching from Baikonur in Kazakhstan.

On his website Mineo Wakita JE9PEL provides the following information:

SpaceX CRS-3 (Dragon C5) Falcon 9 v1.1 is now planned for March 16, 2014 at 0841 UT. It should be carrying these satellites:
• All-Star/THEIA, Colorado Space Grant Consortium, 2401.700 MHz
• Hermes-2, Colorado Space Grant Consortium, 437.425 MHz
• Ho’oponopono-2, University of Hawaii, 427.220 MHz 9600 bps FSK / GMSK
• LMRSat, Jet Propulsion Laboratory
• SporeSat, Santa Clara University, 437.100 MHz and 2401.2-2431.2 MHz
• TechCube-1, NASA Goddard
• TSAT (TestSat-Lite), Taylor University

Soyuz-2.1b, Fregat-M is planned for June 1, 2014 at 1625 UT with these satellites:
•AISSat-2, University of Toronto, Institute for Aerospace Studies, Norway
• Baumanets-2, Bauman Moscow State Technical University, Russia
• DX-1, Dauria Aerospace, Russia
• Meteor-M-N2, NPP VNIIEM, Russia
• M3MSat, CSA / COM DEV, Canada
• Relek (MKA-PN-2), Lavochkin, Russia
• SkySat-2, Skybox Imaging, USA
• TechDemoSat-1, SSTL, UK
• UKube-1, UK Space Agency, UK
• Venta-1, Ventspils University, Latvia

UKube-1 communications subsystem:
• Telemetry downlink 145.840 MHz
• 2401.0 MHz S Band Downlink
• 437.425-437.525 MHz UKSEDS myPocketQub Downlink
• FUNcube subsystem beacon 145.915 MHz 1200 bps BPSK
• 400 mW inverting linear transponder for SSB and CW

- 435.080 -435.060 MHz Uplink
- 145.930 -145.950 MHz Downlink

[ANS thanks Mineo Wakita, JE9PEL & AMSAT-UK for the above announcement]

FUNcube Data Warehouse Min-Max Values

Since deployment on November 21, 2013 of FUNcube-1 (AO-73) the FUNcube team have been capturing the minimum and maximum Realtime values for each channel when they have been uploaded by a ground station. This has given a good overview for the early operation and initial commissioning.

The team have now moved into a steady state of operation and need to check for long-term trends. To achieve this, they have changed the min-max data collection such that it resets every 7 days and we capture the values each time it does so. At reset you will see the reference date change on the page and the min/max values converge. They will diverge again within an orbit.

The team have considered a rolling 7 day period but that is quite a heavyweight process on the server as it has to be run each time we get an upload!

As always, many thanks to all those who are uploading data to the warehouse.

Any feedback to the forum as usual please: http://forum.funcube.org.uk

[ANS thanks AMSAT-UK for the above announcement]

Brown University LED CubeSat

The EQUiSat CubeSat will have an LED beacon visible to the naked eye at night and will transmit data about its health and position.

EQUiSat, being built by a team of students at Brown University in Providence, Rhode Island, has been cleared for launch.

NASA has announced that EQUiSat is among 16 small satellites selected to fly on rockets to be launched over the three-year period beginning in 2015. EQUiSat has not been assigned to a particular rocket, but the announcement assures that the student-led project has a ticket to ride.

“It was pretty great to hear the news on Thursday,” said Hannah Varner, a senior engineering concentrator and one of the team’s leaders. “We’ve all been in disbelief for the last few days.”

The launch will be part of NASA’s CubeSats Launch Initiative. CubeSats are miniature spacecraft — four-inch cubes weighing around two pounds — that can be included as auxiliary payloads on rockets

flown for other primary missions. The program's purpose is to spur innovation in the design of relatively low-cost satellites and to get students interested in space technology. To get into the program, the Brown team submitted an application and made presentations to two review boards that judged the project's technical feasibility and overall merit.

EQUiSat's mission will be largely educational. The tiny satellite will carry a flashing LED beacon that will be visible to the naked eye as it passes through the night sky. In Providence, the beacon should be approximately as bright as the North Star, flashing every two minutes when in the night sky. EQUiSat will also broadcast via radio data on the health of its systems and its orientation relative to the Earth and sun. The signal will be available to anyone with a simple amateur radio receiver.

The idea is for EQUiSat to be a visible and audible ambassador from space to students and space enthusiasts on earth. The Brown team plans to combine the launch with a public outreach program. An app will help people track EQUiSat and know when it's visible at their location. The team also plans to put together lessons that use EQUiSat to teach middle and high school students about satellites, orbital science, and space in general.

"Satellites have become so common but so few people know how important they are to everything we do," Varner said. "They're crucial to cell phones and TV and everything. So exposing a younger audience and a non-science audience to satellites was important for us."

Another aspect of the mission is to show that space can be accessible to just about anyone with enough interest to try to get there.

"CubeSats are a really great architecture because, compared to other kinds of satellites, you can build them really quickly and get a launch comparatively easily," said Emily Gilbert, a physics concentrator and an EQUiSat team leader. "They're launched as secondary payloads so you don't need to commission your own rocket for hundreds of millions of dollars. So it's great for student groups without a lot of money and without a lot of time."

EQUiSat will be inexpensive even by CubeSat standards. The students are building their satellite essentially from scratch, despite the fact that CubeSat parts – chassis, solar panels, and other components – can be purchased. Those parts aren't cheap, and the build cost for most CubeSats is generally north of $30,000. But the EQUiSat team is working on a budget of around $13,000. Ultimately the students hope the design they develop for EQUiSat will lead to a CubeSat that can be built for $3,000 or less.

"We're trying to prove that it's possible to meet all of the specifications and all of the requirements without the very, very costly technology that is out there to build a satellite," Varner said.

The students have worked for the last three years to design and build EQUiSat's key systems. An attitude control system will align the satellite with Earth's magnetic field to keep the LED pointed at a visible angle. A solar array will charge a set of lithium iron phosphate batteries, which will in turn power the LED and radio communications system. All of those systems will be carried on a chassis that can withstand the vibration of launch and the harsh vacuum of space. The team will spend the next year or so refining

those systems and putting them all together on their tiny spacecraft.

The EQUiSat venture was launched in 2011 as part of an engineering design class taught by Rick Fleeter K8VK, adjunct professor of engineering. The project morphed into a student club in 2012 and now has around 30 student members. Fleeter, who founded a private satellite company before coming to Brown, oversees the club. But this is very much a student-owned project, he says.

“They’re just going on their own energy. I kind of got them pointed in the right direction, but it’s not like I have to encourage them or say, ‘Gee, guys, we ought to have a meeting.’ They just go.”

The original student founders were Kelsey MacMillan, Alexander Neff, Alexander Carrere, and Michael Monn KF7DEC, all members of the 2012 class. They passed the torch to the current group of leaders, including Varner, Gilbert, Kelly Hering, Tyler Del Sesto and Casey Meehan. All except Meehan are seniors, so they’ll need to pass the torch again. They’re quite confident that younger students will get EQUiSat into space.

“We have a really enthusiastic bunch coming up behind us,” Gilbert said. “We have a lot of faith in them.”

The team could get its launch call anytime starting next year through 2017.

Brown University Cubesat project
https://mygroups.brown.edu/organization/CubeSat

Facebook https://www.facebook.com/browncubesat

[ANS thanks AMSAT-UK for the above information]

Santa Catalina Island Activation on SO-50

The Palos Verdes Amateur Radio Club is pleased to announce that it will again be activating Santa Catalina Island, NA-066 as part of the RSGB IOTA program from Wednesday, 19 February to Sunday, 23 February 2014. The K6PV/6 operation will straddle grid squares DM03rk/DM03sk.

The team will arrive on the afternoon of the 19h and will be on the air with at least two HF stations by evening, and three HF stations by the next morning. Operation is planned to follow propagation on all HF bands 80 through 10 meters , and on 6 meters if conditions permit. Modes of operation will include SSB, CW, and RTTY.

Satellite operation is planned for SO-50 on available passes Wednesday, Thursday, and Friday. QSL via K6PV.

[ANS thanks the Palos Verdes Amateur Radio Club and the Work-Sat list for the above information]

$50SAT PocketQube Update

Michael Kirkhart KD8QBA provides this update on the $50SAT PocketQube which transmits on 437.505 MHz (+/-9 kHz Doppler shift).

The TLEs on the Dropbox have been updated to reflect the latest element set available from Celestrak. This probably is not necessary, as many (if not all) of you are probably pulling them down into your satellite prediction programs straight from Celestrak's WWW site.

Construction of the replacement engineering model (engineering model 1 was promoted to flight model 1 and is what is in orbit) has been completed, and preliminary tests show it to be operating correctly. I posted a few photos of the build up on the Dropbox in the Pictures/Engineering-Model-2 folder. Final mass is 202.1 g, which is about 4 to 5 grams lighter than the flight model. This is in line with expectations, as it only has 1 fully populated solar panel, and the missing solar cells (18 of the 24 used on the flight model) would add about 4 to 5 g.

The RTTY reports file has been updated to include all telemetry posted/collected as of 2014-02-11. This file has nearly doubled in size from the last update, which was only 16 days ago. Thanks to everyone who has been feeding the data beast by posting their telemetry; please keep doing so. QSL cards for those who have been posting telemetry should start appear in your mailbox in the next few weeks (or sooner).

While it is still quite cold (and snowy) here in EN82, I have been going out with my FT-60 to listen for at least one pass per day. As the terminator continues to move north (not fast enough for some of us who would like to get past winter), I have noticed the point where the FM Morse beacon transitions to slow code speed (indicating it is now warm enough to turn on the solar power) has been occurring earlier in the pass. As soon as it warms up a bit, I will gather some telemetry just to see how much solar power is being generated.

I have a bit more analysis to do, but thanks to some telemetry captured by Kristaps, we believe the low temperature of $50SAT to be about -24 degrees C.

73, Michael Kirkhart KD8QBA

$50SAT is one of the smallest amateur radio satellites ever launched at 5x5x7.5 cm and weighs only 210 grams. Transmitter power is just 100 mW on 437.505 MHz (+/-9 kHz Doppler shift) FM CW/RTTY. It uses the low cost Hope RFM22B single chip radio and PICaxe 40X2 processor.

$50SAT has been a collaborative education project between Professor Bob Twiggs, KE6QMD, Morehead State University and three other radio amateurs, Howie DeFelice, AB2S, Michael Kirkhart, KD8QBA, and Stuart Robinson, GW7HPW.

Further information in the $50SAT Dropbox
https://www.dropbox.com/sh/l3919wtfiywk2gf/-HxyXNsIr8

There is a discussion group for $50SAT
http://groups.yahoo.com/groups/50dollarsat/

50DollarSat http://www.50dollarsat.info/

[ANS thanks Michael Kirkhart, KD8QBA and AMSAT-UK for the above

information]

Upcoming AMSAT Events

Sunday, 23 February 2014 – Vienna Wireless Winterfest at Vienna VA. AMSAT will have a table at this hamfest, Steve Greene KS1G will lead a forum, and there may be satellite demonstrations during this event.

Saturday, 1 March 2014 – Irving Amateur Radio Club Hamfest at Betcha Bingo Hall in Irving TX (between Fort Worth and Dallas). AMSAT will have a table at this hamfest, and there may be satellite demonstrations during this event.

Friday and Saturday, 7-8 March 2014 – Green Country Hamfest and ARRL West Gulf Division Convention at Claremore Expo Center in Claremore OK. AMSAT will have a booth at this event, and there may be satellite demonstrations during this event.

Friday and Saturday, 14-15 March 2014 – Acadiana Amateur Radio Association's Rayne Hamfest and ARRL Delta Division Convention at the Rayne Civic Center in Rayne LA. AMSAT will have a booth at this event, and there may be satellite demonstrations during the event.

Saturday, 15 March 2014 – Scottsdale Amateur Radio Club's Springfest in Scottsdale AZ (northeast of Phoenix). AMSAT will have a table at this hamfest, and satellite demonstrations are planned. Demonstrations at this hamfest will be done using the call sign W1AW/7 as part of the ARRL centennial commemorations, and QSLing will be handled by ARRL.

Saturday, 29 March 2014 – Radio Society of Tucson's 2014 Hamfest in Tucson AZ. AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Saturday, 5 April 2014 – The Greater Baltimore Hamboree and Computerfest 2014, including the Maryland Emergency Preparedness Expo 2014, at the Maryland State Fairgrounds in Timonium MD. AMSAT will have a booth at this hamfest, and other AMSAT-related events may be planned.

Saturday, 5 April 2014 – Amateur Radio Club of Parker County's Weatherford Hamfest at the Central Christian Church in Weatherford TX (west of Fort Worth). AMSAT will have a table at this event, and there may be satellite demonstrations during the hamfest.

Monday, 28 April 2014 – presentation at Franklin County Amateur Radio Club meeting in Greenfield MA by Barry Baines WD4ASW (AMSAT President)

Saturday, 3 May 2014 – Cochise Amateur Radio Association's Larry Warren Hamfest in Sierra Vista AZ (southeast of Tucson) – AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Saturday, 7 June 2014 – Kachina Amateur Radio Club's White Mountain Hamfest in Show Low AZ (eastern Arizona, south of US-60/AZ-77/AZ-260) – AMSAT will have a table at this hamfest, and satellite demonstrations are planned.

Friday and Saturday, 13-14 June 2014 – Ham-Com in Plano TX (north of Dallas)

Thursday through Sunday, 17-20 July 2014 – ARRL Centennial Convention in Hartford CT. AMSAT will host a day-long Satellite Workshop on Thursday, and have a booth at the convention along with an AMSAT Forum and demonstrations throughout the convention.

Saturday and Sunday, 30-31 August 2014 – Shelby Hamfest in Shelby NC (west of Gastonia and Charlotte) – Barry Baines WD4ASW (AMSAT President) will host an AMSAT Forum on Saturday of this weekend

AMSAT maintains and updated list of known upcoming events at http://ww2.amsat.org/?page_id=218

[ANS thanks AMSAT-NA for the above announcement]

ARISS News

Next planned event(s):

1. A telebridge contact with students at Delaware Township School, Sergeantsville, NJ, USA via VK4KHZ is a go for: Wed 2014-02-19 15:04:25 UTC 45 deg.

Delaware Township School has approximately 400 students in pre-kindergarten through eighth grade. It is a one school district located in a rural township in Hunterdon County, NJ. Our school is named for the Delaware River, which runs through part of our township. Students from Delaware Township School go to high school at Hunterdon Central Regional High School with students from four other sending districts, East Amwell, Readington, and Flemington-Raritan. Something special about our township is that it celebrated its 175th anniversary this past year and the County of Hunterdon is currently celebrating its 300th anniversary during 2014. One of our former residents, Daniel Bray, was instrumental in securing boats for the Continental Army to cross the Delaware River when retreating from the British during the Revolutionary War. Our township also has the last covered bridge in use in New Jersey. Our school is proud of not only its township history but also its attention to science. We have three science labs in our school, one dedicated exclusively to elementary school classes and the other two for middle school classes. Every year we hold a Science Night showcasing student science projects, research, and inventions. Our fifth grade students participate in the Science Olympiad completion every year and have been known to bring home many medals. Many of our students move on to honors science classes in high school. In preparation for this radio contact with the International Space Station, one of our students earned his amateur radio operator license and is helping a classmate to earn his license, too. They will be leading a Radio Club Enrichment program for younger students this year. We are very excited to make this radio contact with the International Space Station.

2. A telebridge contact with students at Fort Belvoir Elementary School, Arlington, VA, USA, hosted by Marymount University is a go for: Wed 2014-02-19 19:02:07 UTC 79 deg.

Fort Belvoir Elementary School (FBES) serves approximately 1,200 students in preK-6th grade, 96 percent of whom who are military dependents. Located on Fort Belvoir, an Army installation, FBES is part of the Fairfax County Public School System and one of the largest elementary schools in the Washington metropolitan area. FBES is a STEM (Science, Technology, Engineering and Math) Focus elementary school funded by two consecutive grants from the Department of Defense Education Activity (DoDEA) totaling more than 3.1 million dollars. The grant program is known as, Operation Patriotic STEM (OPS). OPS has enabled FBES to create a fully equipped STEM Lab and hire a dedicated STEM Focus resource teacher, who provides inquiry-based, hands-on lessons for all students. Additionally, students participate in after-school and summer STEM enrichment programming and families enjoy STEM field trips and STEM family days. These activities are specifically designed to increase students' enthusiasm for STEM education and potentially encourage them to pursue STEM careers.

The STEM emphasis is further supported through a partnership with Marymount University (MU). MU education and science faculty and students organize hands-on STEM activities for the annual family events such as "Family STEM Day" and the "Science and Engineering Fair and Family Day". Additionally, MU will begin a new program for the spring semester 2014. MU pre-service teachers will come to FBES for their "Math and Science Methodologies in Education" coursework. Pre-service teachers will be bused to FBES weekly, during the spring semester 2014, where they will be instructed by their professor and then practice their newly acquired skills in the classroom with FBES teachers and students. On the day of the ARISS contact, these students will be present to assist.

3. A telebridge contact with cadets at Australian Air League - South Australia Wing, Elizabeth, South Australia via IK1SLD (***) is a go for: Fri 2014-02-21 08:36:46 30 deg.

We have approximately 100 cadets in South Australia, approximately 25% being female. Currently we have three squadrons here in South Australia. Parafield, Gawler and Port Adelaide. Each squadron meets once a week, but also at many other times throughout the year for other reason, such as ANZAC day, citizenship ceremonies, flying days, camps etc. There are squadrons all over Australia.

The Australian Air League is a youth organisation for boys and girls aged from 8 to 18 years which encourages an interest in aviation as a career or as a hobby for the youth of Australia. The organisation is entirely self-funding and is staffed by volunteers who give their time to achieve its goals.

The aims and objectives of the Australian Air League include:
1. To promote and encourage the development of Aviation in the Youth of Australia
2. To promote good citizenship
3. To promote ingenuity and resourcefulness of its members
4. To develop the physical and mental abilities of its members

ARISS is an international educational outreach program partnering the participating space agencies, NASA, Russian Space Agency, ESA, CNES, JAXA, and CSA, with the AMSAT and IARU organizations from participating countries.

ARISS offers an opportunity for students to experience the
excitement of Amateur Radio by talking directly with crewmembers on-
board the International Space Station. Teachers, parents and
communities see, first hand, how Amateur Radio and crewmembers on ISS
can energize youngsters' interest in science, technology, and
learning. Further information on the ARISS program is available on
the website
http://www.ariss.org/
(graciously hosted by the Radio Amateurs of Canada).

[ANS thanks ARISS for the above update]

Satellite Shorts from all over

Satellites in ARRLs Radio Waves Newsletter

The Winter 2014 edition of Radio Waves, ARRL's e-newsletter for
instructors and teachers, is now available.

Among the selection of articles: High School Students Put Packet
Radio to Work for Local Environmental Study, Club Boasts Fourfold
Increase in New Licensees/Upgrades, Instructor Corner, News, Ideas,
Support, and In The Classroom: Teaching Ohm's Law.

The newsletter also features the AMSAT-UK FUNcube satellite project.

Radio Waves aims to provide information that will help educators and
instructors with licensing or classroom instruction and to share
experiences and stories of other instructors and teachers that may
offer ideas for you to incorporate in your own activities.

Download the Winter Radio Waves at
http://www.arrl.org/files/file/Radio%20Waves%20Newsletter/Winter%2020
14%20Radio%20Waves.pdf

[ANS thanks the ARRL for the above short]

EL96 SO-50 15-16 Feb 2014

John, K8YSE will try to operate on SO-50 from EL96 on Saturday
and Sunday, 15 and 16 February as follows:

15Feb2014   1302-1315utc 46deg elev max
15Feb2014   2322-2334utc 31deg elev max

16Feb2014   1149-1201utc 36deg elev max
16Feb2014   2209-2221utc 53deg elev max

The morning passes will have limited visibility to
the north, however, I will try to operate from a
better location on the late afternoon passes.

I cannot promise that I will be on all passes but I
will try.

If you work me and need a card, please send an email
to my qrz.com address with qso details.
Do not send any SASE's.

[ANS thanks John, K8YSE for the above short]

Fox Satellites Description

(The following is a description of the Fox's satellites that I
excerpted from an AMSAT-BB response)

The main point of Fox-2 is to develop and fly an
advanced, software defined transponder (SDX.)
An SDX can be programmed to be any kind of
transponder. It will be a linear, inverting,
mode-J transponder by default.

We would also like to try some new and
interesting digital modes perhaps including
digital voice which would be my personal favorite.
That is the tremendous flexibility you get with
an SDX. You can change the transponder in software.

ARISSat-1 was our first attempt at an SDX and it
worked very well. It could only be programmed on
the ground though. The SDX for Fox-2 will
be programmable in orbit.

Fox-2 will be a 3U CubeSat (3x the size of Fox-1)
providing a lot more power and space for the
electronics.

The source of confusion may be because we are
building four Fox-1 flight units. The idea is
to have them available and ready to fly so
we can easily team up with universities that want
to fly science missions and get free launches.
Building them all at once is also a much cheaper
way to build satellites.

All four Fox-1 units will have the same hardware
and avionics. The universities will supply their
experiment cards and the software can be customized
for each satellite as needed.

Once the Fox-1 flight models are built, the engineering
team can begin working on Fox-2. That should start
this year.

The status of the Fox-1 satellites is as follows:

Fox-1 (Fox-1A) is scheduled to fly on NROL-55.

RadFxSat (Fox-1B) is a joint project with Vanderbilt
University. It has already been accepted into the
NASA ELaNa program but it has not been assigned a
launch yet.

Fox-1C and Fox-1D are not currently assingned.

[ANS thanks Tony Monterio, AA2TX for the above short]

Corrections from ANS-040

In the "Satellites News from the Magazines" report, Hector Martinez CO6CBF/KF5YXV was mistakenly refered to as Victor.

FCC Seeks Comments on WR-2015 Draft Recommendations (Correction)

Last week's article on the FCC seeking comments on WR-2015 Draft Recommendations should have listed the ARRL as the source.
In the search for articles, and the many news reflectors that exist on the internet (including the ANS), sometimes the source is misidentified. ANS apologizes for any inconvenience in finding the referenced material. A full reprint is below.

FCC Seeks Comments on WR-2015 Draft Recommendations

The FCC has invited comments by February 18 on the latest batch of draft recommendations of its Advisory Committee for World Radiocommunication Conference 2015 (WRC-2015).

At its January 27 meeting, the Advisory Committee (WAC) approved draft recommendations on a number of issues that will be considered by WRC-2015. Some items, including one which could possibly lead to changes to 60 meters in the long term, could affect the Amateur and Amateur-Satellite services.

Of interest to the Amateur Radio Satellite community, WRC-2015 will consider a number of issues that could impact amateur allocations above 420 MHz, including a possible extension of the current worldwide allocation to the Earth Exploration-Satellite service in the band 9300 to 9900 MHz by up to 600 MHz "within the frequency bands 8700 to 9300 MHz and/or 9900 to 10,500 MHz"

Incumbent services in the 9900 to 10,500 MHz range include the Radiolocation, Fixed, Mobile, Amateur, and Amateur-Satellite services.

The Amateur Service is secondary at 10,000 to 10,500 MHz worldwide, and the Amateur-Satellite Service is secondary at 10,450 to 10,500 MHz worldwide.

The FCC said comments provided by interested parties will assist it in its consultations with the US Department of State and NTIA in the development of US positions for WRC-2015. "The recommendations...may evolve in the course of inter-agency discussions as we approach WRC-15 and, therefore, do not constitute a final US Government position on any issue," the FCC Public Notice stressed.

Comments should reference IB Docket 04-286 and specific recommendations by WAC document number. Interested parties may file comments via the FCC's Electronic Comment Filing System (ECFS) at

http://apps.fcc.gov/ecfs/

The ARRL plans to file comments in this proceeding.

[ANS thanks the ARRL for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
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